

## SEQUENCE LISTING

<110> WEIHE, EBERHARD  
SCHAFFER, MARTIN

<120> SCREENING METHOD USING BNPI AND DNPI

<130> 029310.52995US

<140>

<141>

<150> PCT/EP02/06484

<151> 2002-06-13

<150> DE 101 28 541.8

<151> 2001-06-13

<160> 14

<170> PatentIn Ver. 3.2

<210> 1

<211> 2366

<212> DNA

<213> Homo sapiens

<400> 1

```

ccggcggcag gagccgccac catggagttc cgccaggagg agtttcggaa gctagcgggt 60
cgtgctctcg ggaagctgca ccgccttctg gagaagcggc aggaaggcgc ggagacgctg 120
gagctgagtg cggatgggcg cccgggtgacc acgcagaccc gggaccgcgc ggtgggtggac 180
tgcacctgct tcggcctccc tcgccgtac attatcgcca tcatgagtgg tctgggcttc 240
tgcacagct ttggcatccg ctgcaacctg ggcgtggcca tcgtctccat ggtcaataac 300
agcacgaccc accgcggggg ccacgtggtg gtgcagaaag cccagttcag ctgggatcca 360
gagactgtcg gcctcataca cggctccttt ttctggggct acattgtcac tcagattcca 420
ggaggattta tctgtcaaaa atttgcagcc aacagagttt tcggctttgc tattgtggca 480
acatccactc taaacatgct gatccctca gctgcccgcg tccactatgg ctgtgtcatc 540
ttcgtgagga tcctgcaggg gttggtagag ggggtcacat acccgcctg ccatgggatc 600
tggagcaaat gggcccacc cttagaacgg agtcgcctgg cgacgacagc cttttgtggt 660
tcctatgctg gggcgggtgt cgcgatgccc ctgcggggg tccttgtgca gtactcagga 720
tggagctctg ttttctacgt ctacggcagc ttcgggatct tctggtacct gttctggctg 780
ctcgtctcct acgagtcctc cgcgtgcac cccagcatct cggaggagga gcgcaagtac 840
atcgaggacg ccatcggaga gagcgcgaaa ctcatgaacc ccctcacgaa gtttagcact 900
ccctggcggc gcttcttcac gtctatgcca gtctatgcca tcatcgtggc caacttctgc 960
cgcagctgga cgttctacct gctgtcatc tcccagcccg cctacttcga agaagtgttc 1020
ggcttcgaga tcagcaagggt aggcctggtg tccgcgtgc cccacctggt catgaccatc 1080
atcgtgcccc tcggcggcca gatcgcggac ttctgcgga gccgcgcgat catgtccacc 1140
accaacgtgc gcaagttgat gaactgcgga ggcttcggca tggaaagccac gctgctgttg 1200
gtggctcggt actcgcactc caagggcgtg gccatctcct tcctggctct agccgtgggc 1260
ttcagcggct tcgccatctc tgggttcaac gtgaaccacc tggacatagc cccgcgctac 1320
gccagcatcc tcatgggcat ctccaacggc gtgggcacac tgtcgggcat ggtgtgcccc 1380
atcatcgtgg gggccatgac taagcacaag actcgggagg agtggcagta cgtgttcccta 1440
attgcctccc tgggtgacta tggaggtgtc atcttctacg gggctcttgc ttctggagag 1500
aagcagccgt gggcagagcc tgaggagatg agcaggagga agtgtggctt cgttggccat 1560
gaccagctgg ctggcagtga cgacagcgaa atggaggatg aggctgagcc cccgggggca 1620
ccccctgcac ccccgccctc ctatggggcc acacacagca catttcagcc ccccaggccc 1680
ccacccctg tccgggacta ctgacctgt gcctcccact gaatggcagt ttccaggacc 1740

```

```

tccattccac tcattctctgg cctgagtgac agtgtcaagg aaccctgctc ctctctgtcc 1800
tgcctcaggc ctaagaagca ctctcccttg ttcccagtgc tgtcaaatec tctttccttc 1860
ccaattgcct ctcaagggta gtgaagctgc agactgacag tttcaaggat acccaaattc 1920
ccctaaaggt tccctctcca cccgttctgc ctcaagtgtt tcaaattctc cctttcaggg 1980
ctttatttga atggacagtt cgacctctta ctctctcttg tggttttgag gcacccacac 2040
cccccgcttt cctttatctc cagggactct caggctaacc tttgagatca ctcaactctc 2100
atctcctttc agaaaaattc aaggctctcc tctagaagtt tcaaattctc cccaactctg 2160
ttctgcatct tccagattgg ttaaccaat tactcgtccc cgccattcca gggattgatt 2220
ctcaccagcg tttctgatgg aaaatggcgg tttcaagtcc ccgattccgt gcccacttca 2280
catctcccct accagcagat tctgcgaaaag caccaaattt ctcaagacct tcttctccct 2340
agcttagcat aatgtctggg gaaaca 2366

```

<210> 2

<211> 560

<212> PRT

<213> Homo sapiens

<400> 2

```

Met Glu Phe Arg Gln Glu Glu Phe Arg Lys Leu Ala Gly Arg Ala Leu
  1           5           10           15

Gly Lys Leu His Arg Leu Leu Glu Lys Arg Gln Glu Gly Ala Glu Thr
          20           25           30

Leu Glu Leu Ser Ala Asp Gly Arg Pro Val Thr Thr Gln Thr Arg Asp
  35           40           45

Pro Pro Val Val Asp Cys Thr Cys Phe Gly Leu Pro Arg Arg Tyr Ile
  50           55           60

Ile Ala Ile Met Ser Gly Leu Gly Phe Cys Ile Ser Phe Gly Ile Arg
  65           70           75           80

Cys Asn Leu Gly Val Ala Ile Val Ser Met Val Asn Asn Ser Thr Thr
          85           90           95

His Arg Gly Gly His Val Val Val Gln Lys Ala Gln Phe Ser Trp Asp
 100           105           110

Pro Glu Thr Val Gly Leu Ile His Gly Ser Phe Phe Trp Gly Tyr Ile
 115           120           125

Val Thr Gln Ile Pro Gly Gly Phe Ile Cys Gln Lys Phe Ala Ala Asn
 130           135           140

Arg Val Phe Gly Phe Ala Ile Val Ala Thr Ser Thr Leu Asn Met Leu
 145           150           155           160

Ile Pro Ser Ala Ala Arg Val His Tyr Gly Cys Val Ile Phe Val Arg
          165           170           175

Ile Leu Gln Gly Leu Val Glu Gly Val Thr Tyr Pro Ala Cys His Gly
 180           185           190

Ile Trp Ser Lys Trp Ala Pro Pro Leu Glu Arg Ser Arg Leu Ala Thr
 195           200           205

```

Thr Ala Phe Cys Gly Ser Tyr Ala Gly Ala Val Val Ala Met Pro Leu  
 210 215 220  
 Ala Gly Val Leu Val Gln Tyr Ser Gly Trp Ser Ser Val Phe Tyr Val  
 225 230 235 240  
 Tyr Gly Ser Phe Gly Ile Phe Trp Tyr Leu Phe Trp Leu Leu Val Ser  
 245 250 255  
 Tyr Glu Ser Pro Ala Leu His Pro Ser Ile Ser Glu Glu Glu Arg Lys  
 260 265 270  
 Tyr Ile Glu Asp Ala Ile Gly Glu Ser Ala Lys Leu Met Asn Pro Leu  
 275 280 285  
 Thr Lys Phe Ser Thr Pro Trp Arg Arg Phe Phe Thr Ser Met Pro Val  
 290 295 300  
 Tyr Ala Ile Ile Val Ala Asn Phe Cys Arg Ser Trp Thr Phe Tyr Leu  
 305 310 315 320  
 Leu Leu Ile Ser Gln Pro Ala Tyr Phe Glu Glu Val Phe Gly Phe Glu  
 325 330 335  
 Ile Ser Lys Val Gly Leu Val Ser Ala Leu Pro His Leu Val Met Thr  
 340 345 350  
 Ile Ile Val Pro Ile Gly Gly Gln Ile Ala Asp Phe Leu Arg Ser Arg  
 355 360 365  
 Arg Ile Met Ser Thr Thr Asn Val Arg Lys Leu Met Asn Cys Gly Gly  
 370 375 380  
 Phe Gly Met Glu Ala Thr Leu Leu Leu Val Val Gly Tyr Ser His Ser  
 385 390 395 400  
 Lys Gly Val Ala Ile Ser Phe Leu Val Leu Ala Val Gly Phe Ser Gly  
 405 410 415  
 Phe Ala Ile Ser Gly Phe Asn Val Asn His Leu Asp Ile Ala Pro Arg  
 420 425 430  
 Tyr Ala Ser Ile Leu Met Gly Ile Ser Asn Gly Val Gly Thr Leu Ser  
 435 440 445  
 Gly Met Val Cys Pro Ile Ile Val Gly Ala Met Thr Lys His Lys Thr  
 450 455 460  
 Arg Glu Glu Trp Gln Tyr Val Phe Leu Ile Ala Ser Leu Val His Tyr  
 465 470 475 480  
 Gly Gly Val Ile Phe Tyr Gly Val Phe Ala Ser Gly Glu Lys Gln Pro  
 485 490 495  
 Trp Ala Glu Pro Glu Glu Met Ser Glu Glu Lys Cys Gly Phe Val Gly  
 500 505 510

His Asp Gln Leu Ala Gly Ser Asp Asp Ser Glu Met Glu Asp Glu Ala  
515 520 525

Glu Pro Pro Gly Ala Pro Pro Ala Pro Pro Pro Ser Tyr Gly Ala Thr  
530 535 540

His Ser Thr Phe Gln Pro Pro Arg Pro Pro Pro Pro Val Arg Asp Tyr  
545 550 555 560

<210> 3

<211> 2716

<212> DNA

<213> Homo sapiens

<400> 3

```

cgataagctt gatatcgaat tccggactct tgctcgggcg ccttaaccg gcgttcggtt 60
catccgcag cgccagttct gcttaccaaa agtggcccac taggcactcg cattccacgc 120
ccggctccac gccagcgagc cgggcttctt acccatttaa agtttgagaa taggttgaga 180
tcgtttcggc cccaagacct ctaatcattc gctttaccgg ataaaactgc gtggcggggg 240
tgctcgggt ctgcgagagc gccagctatc ctgagggaaa cttcggaggg aaccagctac 300
tagatggttc gattagtctt tcgcccctat acccaggtcg gacgaccgat ttgcacgtca 360
ggaccgctac ggacctccac cagagtttcc tctggcttcg ccctgcccag gcgatcggcg 420
ggggggaccc gcgggggtgac cggcggcagg agccgccacc atggagttcc gccaggagga 480
gtttcggaag ctagcgggtc gtgctctcgg gaagctgcac cgccttctgg agaagcggca 540
ggaaggcgcg gagacgtcg agctgagtgc ggaaggcgcg ccggtgacca cgcagacccg 600
ggaccgcgcg gtggtggact gcaoctgctt cggcctccct cgcgctaca ttatcgccat 660
catgagtggc ctgggcttct gcatcagctt tggcatccgc tgcaacctgg gcgtggccat 720
cgtctccatg gtcaataaca gacgaccca ccgcgggggc cacgtggtgg tgcagaaagc 780
ccagttcagc tgggatccag agactgtcgg cctcatacac ggctcctttt tctggggcta 840
cattgtcact cagattccag gaggatttat ctgtcaaaaa tttgcagcca acagagtttt 900
cggctttgct attgtggcaa catccactct aaacatgctg atccccctag ctgcccgcgt 960
ccactatggc tgtgtcatct tcgtgaggat cctgcagggg ttggtagagg gggtcacata 1020
ccccgcctgc catgggatct ggagcaaatg ggccccaccc ttagaacgga gtcgcctggc 1080
gacgacgcg ttttgtggtt cctatgctgt ggcggtggtc gcgatgcccc tcgccggggg 1140
ccttgtgcag tactcaggat ggagctctgt tttctacgtc tacggcagct tcgggatcct 1200
ctggtacctg ttctggctgc tcgtctccta cgagtcccc gcgctgcacc ccagcatctc 1260
ggaggaggag cgcaagtaca tcgaggacgc catcgagag agcgcgaaac tcatgaaccc 1320
cctcacgaag tttagcactc cctggcgggc cttcttcacg tctatgccag tctatgccat 1380

catcgtggcc aacttctgcc gcagctggac gttctacctg ctgctcatct cccagcccga 1440
ctacttcgaa gaagtgttcg gcttcgagat cagcaaggta ggcctggtgt ccgcgtgcc 1500
ccacctggtc atgaccatca tcgtgcccat cggcggccag atcgcggact tcctgcggag 1560
ccgccgcatc atgtccacca ccaacgtgcg caagttgatg aactgcggag gcttcggcat 1620
ggaagccacg ctgctgttgg tggtcggcta ctcgcactcc aagggcgtgg ccatctcctt 1680
cctggtccta gccgtgggct tcagcggctt cgccatctct gggttcaacg tgaaccacct 1740
ggacatagcc ccgcgtacg ccagcatcct catgggcac tccaacggcg tgggcacact 1800
gtcgggcatg gtgtgcccc tcatcgtggg ggccatgact aagcacaaga ctcgaggaga 1860
gtggcagtac gtgttcctaa ttgcctccct ggtgcactat ggaggtgtca tcttctacgg 1920
ggtctttgct tctggagaga agcagccgtg ggcagagcct gaggagatga gcgaggagaa 1980
gtgtggcttc gttggccatg accagctggc tggcagtgc gacagcgaaa tggaggatga 2040
ggctgagccc ccgggggcac cccctgcacc cccgccctcc tatggggcca cacacagcac 2100
atttcagccc cccaggcccc caccctctgt ccgggactac tgacctgtg cctccactg 2160

```

```

aatggcagtt tccaggacct ccattccact catctctggc ctgagtgaca gtgtcaagga 2220
accctgctcc tctctgtcct gcctcaggcc taagaagcac tctcccttgt tccagtgct 2280
gtcaaatcct ctttccttcc caattgcctc tcaggggtag tgaagctgca gactgacagt 2340
ttcaaggata cccaaattcc cctaaagggt ccctctccac ccgttctgcc tcagtgggtt 2400
caaatctctc ctttcagggc tttatttgaa tggacagttc gacctcttac tctctcttgt 2460
ggttttgagg caccacacacc ccccgctttc ctttatctcc agggactctc aggctaacct 2520
ttgagatcac tcagctccca tctcctttca gaaaaattca aggtcctcct ctagaagttt 2580
caaatctctc ccaactctgt tctgcatctt ccagattggt ttaaccaatt actcgtcccc 2640
gccattccag ggattgattc tcaccagcgt ttctgatgga aaatggcggg aattcctgca 2700
gcccggggga tccact 2716

```

<210> 4

<211> 560

<212> PRT

<213> Homo sapiens

<400> 4

```

Met Glu Phe Arg Gln Glu Glu Phe Arg Lys Leu Ala Gly Arg Ala Leu
  1              5              10              15

Gly Lys Leu His Arg Leu Leu Glu Lys Arg Gln Glu Gly Ala Glu Thr
          20              25              30

Leu Glu Leu Ser Ala Asp Gly Arg Pro Val Thr Thr Gln Thr Arg Asp
    35              40              45

Pro Pro Val Val Asp Cys Thr Cys Phe Gly Leu Pro Arg Arg Tyr Ile
    50              55              60

Ile Ala Ile Met Ser Gly Leu Gly Phe Cys Ile Ser Phe Gly Ile Arg
    65              70              75              80

Cys Asn Leu Gly Val Ala Ile Val Ser Met Val Asn Asn Ser Thr Thr
          85              90              95

His Arg Gly Gly His Val Val Val Gln Lys Ala Gln Phe Ser Trp Asp
    100              105              110

Pro Glu Thr Val Gly Leu Ile His Gly Ser Phe Phe Trp Gly Tyr Ile
    115              120              125

Val Thr Gln Ile Pro Gly Gly Phe Ile Cys Gln Lys Phe Ala Ala Asn
    130              135              140

Arg Val Phe Gly Phe Ala Ile Val Ala Thr Ser Thr Leu Asn Met Leu
    145              150              155              160

Ile Pro Ser Ala Ala Arg Val His Tyr Gly Cys Val Ile Phe Val Arg
          165              170              175

Ile Leu Gln Gly Leu Val Glu Gly Val Thr Tyr Pro Ala Cys His Gly
          180              185              190

Ile Trp Ser Lys Trp Ala Pro Pro Leu Glu Arg Ser Arg Leu Ala Thr
    195              200              205

```

Thr Ala Phe Cys Gly Ser Tyr Ala Gly Ala Val Val Ala Met Pro Leu  
 210 215 220  
 Ala Gly Val Leu Val Gln Tyr Ser Gly Trp Ser Ser Val Phe Tyr Val  
 225 230 235 240  
 Tyr Gly Ser Phe Gly Ile Phe Trp Tyr Leu Phe Trp Leu Leu Val Ser  
 245 250 255  
 Tyr Glu Ser Pro Ala Leu His Pro Ser Ile Ser Glu Glu Glu Arg Lys  
 260 265 270  
 Tyr Ile Glu Asp Ala Ile Gly Glu Ser Ala Lys Leu Met Asn Pro Leu  
 275 280 285  
 Thr Lys Phe Ser Thr Pro Trp Arg Arg Phe Phe Thr Ser Met Pro Val  
 290 295 300  
 Tyr Ala Ile Ile Val Ala Asn Phe Cys Arg Ser Trp Thr Phe Tyr Leu  
 305 310 315 320  
 Leu Leu Ile Ser Gln Pro Asp Tyr Phe Glu Glu Val Phe Gly Phe Glu  
 325 330 335  
 Ile Ser Lys Val Gly Leu Val Ser Ala Leu Pro His Leu Val Met Thr  
 340 345 350  
 Ile Ile Val Pro Ile Gly Gly Gln Ile Ala Asp Phe Leu Arg Ser Arg  
 355 360 365  
 Arg Ile Met Ser Thr Thr Asn Val Arg Lys Leu Met Asn Cys Gly Gly  
 370 375 380  
 Phe Gly Met Glu Ala Thr Leu Leu Leu Val Val Gly Tyr Ser His Ser  
 385 390 395 400  
 Lys Gly Val Ala Ile Ser Phe Leu Val Leu Ala Val Gly Phe Ser Gly  
 405 410 415  
 Phe Ala Ile Ser Gly Phe Asn Val Asn His Leu Asp Ile Ala Pro Arg  
 420 425 430  
 Tyr Ala Ser Ile Leu Met Gly Ile Ser Asn Gly Val Gly Thr Leu Ser  
 435 440 445  
 Gly Met Val Cys Pro Ile Ile Val Gly Ala Met Thr Lys His Lys Thr  
 450 455 460  
 Arg Glu Glu Trp Gln Tyr Val Phe Leu Ile Ala Ser Leu Val His Tyr  
 465 470 475 480  
 Gly Gly Val Ile Phe Tyr Gly Val Phe Ala Ser Gly Glu Lys Gln Pro  
 485 490 495  
 Trp Ala Glu Pro Glu Glu Met Ser Glu Glu Lys Cys Gly Phe Val Gly

500	505	510
His Asp Gln Leu Ala Gly Ser Asp Asp Ser Glu Met Glu Asp Glu Ala		
515	520	525
Glu Pro Pro Gly Ala Pro Pro Ala Pro Pro Pro Ser Tyr Gly Ala Thr		
530	535	540
His Ser Thr Phe Gln Pro Pro Arg Pro Pro Pro Pro Val Arg Asp Tyr		
545	550	555
		560

<210> 5  
 <211> 2024  
 <212> DNA  
 <213> Rattus norvegicus

<400> 5  
 gaattcggca cgagcgggagc tgcgggggccc ggccggggccc gggcgggaccc cgggatcccg 60  
 gacgcgggccg cccggggcccg cgggcgggggg gattggcagg ggacccgcgt gggcacagcc 120  
 accatggagt tccggcagga ggagtttcgg aagctggcgg ggcgcgccct ggggaggctg 180  
 caccggttac tggagaagcg gcaggaaggc gcggagacat tggagctgag cgcgcagcggg 240  
 cgcccagtga ccacacacac gcgggacccc cgggtggtgg actgcacttg ctttggcctc 300  
 cctcgccgct acatcatcgc gatcatgagc ggtctgggtt tctgcatcag ctttggcatc 360  
 cgctgcaacc tgggcgtggc catcgatatcc atggtcaaca acagtacaac ccaccgtggg 420  
 ggccacgtgg tggatgcagaa agcccagttc aactgggatc cagagactgt cggcctcata 480  
 catggctcct ttttctgggg gtacattgtc actcagattc ctggaggatt tatctgcca 540  
 aaattcgcag ccaacagggt ctttggcctt gccattgtgg ctacctccac cctaaatatg 600  
 ttgatccctt cagcagcccg tgttcaactat ggctgtgtca tcttcgtgag gatccttcag 660  
 ggattggtgg agggggtcac ataccctgct tgccatggca tctggagcaa atgggcccct 720  
 cccttagaac ggagtcggct ggcgacgaca gccttttgcg gttcctatgc cggggcagtg 780  
 gttgccatgc ctctggctgg ggtcctggta cagtattcag gatggagttc tgtcttctat 840  
 gtctatggca gcttcgggat cttttggtac ctgttctggt tgcttgtctc ctacgagtca 900  
 cctgcactac accccagcat ctccgaggag gagcgcaaat acattgagga tgccatcgga 960  
 gaaagcgcca agctcatgaa cctgtttacg aagttaaaca caccctggag gcgcttcttt 1020  
 acctccatgc cggctcatgc catcattgtc gccaaacttt gccgcagctg gactttctac 1080  
 ctgctcctca tctcccagcc cgctactttt gaagaagtgt tcggctttga gatcagcaag 1140  
 gtgggactgg tgtcggcact gcctcacctt gtcagtacta tcatcgtacc catcggaggc 1200  
 cagatcgccg acttcctgcg cagtcgtcat ataatgtcca cgaccaatgt gcgaaagctg 1260  
 atgaactgcg ggggttttcgg gatggaagct acgctgctgc tgggtggtcgg atactcacac 1320  
 tccaagggcg tggccatctc ctctcctggc ctggctgtgg gcttcagtg ctttgcctatc 1380  
 tctgggttta acgtgaacca cttggacatc gcccctcgat atgccagcat cttgatgggc 1440  
 atttccaatg gcgtgggcac actgtctggg atggtgtgcc ccatcatcgt ggggtgcaatg 1500  
 accaagcaca agacgcggga ggagtggcag tacgtgttcc tcatagcctc cctgggtgcac 1560  
 tatggagggt tcattctcta tggggctctt gcttcgggag agaaacagcc gtgggcagag 1620  
 ccggaggaga tgagcgagga gaagtgtggc tttgttggcc acgaccagct ggctggcagt 1680  
 gacgaaagtg aaatggaaga cgaggttgag cccccggggg cccccccgc acctccgcct 1740  
 tcctacgggg ccacacacag cacagttcag cctccaaggc cccaccccc tgtccgggac 1800  
 tactgaccac gtgcctccca ctggtgggca gtttccagga cctccactcg atacacctct 1860  
 agcctaaacg gcagtgtcga ggaaccccac tcctctcctg cctcaggctt aagatgcaag 1920  
 tcttcccttg tgcccagtgc tgtccgacca gccctctctc cttctcaact gcctcttgca 1980  
 ggggtgaagc tgcacactag cagtttcaag ctcgtgccga attc 2024

<210> 6  
 <211> 560  
 <212> PRT  
 <213> Rattus norvegicus

<400> 6

Met	Glu	Phe	Arg	Gln	Glu	Glu	Phe	Arg	Lys	Leu	Ala	Gly	Arg	Ala	Leu
1				5					10					15	
Gly	Arg	Leu	His	Arg	Leu	Leu	Glu	Lys	Arg	Gln	Glu	Gly	Ala	Glu	Thr
			20					25					30		
Leu	Glu	Leu	Ser	Ala	Asp	Gly	Arg	Pro	Val	Thr	Thr	His	Thr	Arg	Asp
		35					40					45			
Pro	Pro	Val	Val	Asp	Cys	Thr	Cys	Phe	Gly	Leu	Pro	Arg	Arg	Tyr	Ile
	50					55					60				
Ile	Ala	Ile	Met	Ser	Gly	Leu	Gly	Phe	Cys	Ile	Ser	Phe	Gly	Ile	Arg
65					70					75					80
Cys	Asn	Leu	Gly	Val	Ala	Ile	Val	Ser	Met	Val	Asn	Asn	Ser	Thr	Thr
				85					90						95
His	Arg	Gly	Gly	His	Val	Val	Val	Gln	Lys	Ala	Gln	Phe	Asn	Trp	Asp
			100					105					110		
Pro	Glu	Thr	Val	Gly	Leu	Ile	His	Gly	Ser	Phe	Phe	Trp	Gly	Tyr	Ile
		115					120					125			
Val	Thr	Gln	Ile	Pro	Gly	Gly	Phe	Ile	Cys	Gln	Lys	Phe	Ala	Ala	Asn
		130				135					140				
Arg	Val	Phe	Gly	Phe	Ala	Ile	Val	Ala	Thr	Ser	Thr	Leu	Asn	Met	Leu
145					150					155					160
Ile	Pro	Ser	Ala	Ala	Arg	Val	His	Tyr	Gly	Cys	Val	Ile	Phe	Val	Arg
				165					170					175	
Ile	Leu	Gln	Gly	Leu	Val	Glu	Gly	Val	Thr	Tyr	Pro	Ala	Cys	His	Gly
			180					185					190		
Ile	Trp	Ser	Lys	Trp	Ala	Pro	Pro	Leu	Glu	Arg	Ser	Arg	Leu	Ala	Thr
		195					200					205			
Thr	Ala	Phe	Cys	Gly	Ser	Tyr	Ala	Gly	Ala	Val	Val	Ala	Met	Pro	Leu
	210					215					220				
Ala	Gly	Val	Leu	Val	Gln	Tyr	Ser	Gly	Trp	Ser	Ser	Val	Phe	Tyr	Val
225					230					235					240
Tyr	Gly	Ser	Phe	Gly	Ile	Phe	Trp	Tyr	Leu	Phe	Trp	Leu	Leu	Val	Ser
				245					250					255	
Tyr	Glu	Ser	Pro	Ala	Leu	His	Pro	Ser	Ile	Ser	Glu	Glu	Glu	Arg	Lys
			260					265						270	

Tyr Ile Glu Asp Ala Ile Gly Glu Ser Ala Lys Leu Met Asn Pro Val  
 275 280 285  
 Thr Lys Phe Asn Thr Pro Trp Arg Arg Phe Phe Thr Ser Met Pro Val  
 290 295 300  
 Tyr Ala Ile Ile Val Ala Asn Phe Cys Arg Ser Trp Thr Phe Tyr Leu  
 305 310 315 320  
 Leu Leu Ile Ser Gln Pro Ala Tyr Phe Glu Glu Val Phe Gly Phe Glu  
 325 330 335  
 Ile Ser Lys Val Gly Leu Val Ser Ala Leu Pro His Leu Val Met Thr  
 340 345 350  
 Ile Ile Val Pro Ile Gly Gly Gln Ile Ala Asp Phe Leu Arg Ser Arg  
 355 360 365  
 His Ile Met Ser Thr Thr Asn Val Arg Lys Leu Met Asn Cys Gly Gly  
 370 375 380  
 Phe Gly Met Glu Ala Thr Leu Leu Leu Val Val Gly Tyr Ser His Ser  
 385 390 395 400  
 Lys Gly Val Ala Ile Ser Phe Leu Val Leu Ala Val Gly Phe Ser Gly  
 405 410 415  
 Phe Ala Ile Ser Gly Phe Asn Val Asn His Leu Asp Ile Ala Pro Arg  
 420 425 430  
 Tyr Ala Ser Ile Leu Met Gly Ile Ser Asn Gly Val Gly Thr Leu Ser  
 435 440 445  
 Gly Met Val Cys Pro Ile Ile Val Gly Ala Met Thr Lys His Lys Thr  
 450 455 460  
 Arg Glu Glu Trp Gln Tyr Val Phe Leu Ile Ala Ser Leu Val His Tyr  
 465 470 475 480  
 Gly Gly Val Ile Phe Tyr Gly Val Phe Ala Ser Gly Glu Lys Gln Pro  
 485 490 495  
 Trp Ala Glu Pro Glu Glu Met Ser Glu Glu Lys Cys Gly Phe Val Gly  
 500 505 510  
 His Asp Gln Leu Ala Gly Ser Asp Glu Ser Glu Met Glu Asp Glu Val  
 515 520 525  
 Glu Pro Pro Gly Ala Pro Pro Ala Pro Pro Pro Ser Tyr Gly Ala Thr  
 530 535 540  
 His Ser Thr Val Gln Pro Pro Arg Pro Pro Pro Pro Val Arg Asp Tyr  
 545 550 555 560

<210> 7  
 <211> 2836  
 <212> DNA  
 <213> Mus musculus

<400> 7  
 cggccgcccc ggccccgcccc cgggggggatt ggcagggggac ccgcgtgggc acagccacca 60  
 tggagttccg gcaggaggag ttccggaagc tggcggggcg cgccctgggg aggctgcacc 120  
 ggttactgga gaagcggcag gaaggcgcgg agacactgga gctgagtgcc gacgggcggc 180  
 cagtgaccac gcacactcgg gaccgcctg tgggtggactg cacctgcttt ggccctccctc 240  
 gtcgctacat catcgccatc atgagcggtc tgggtttctg tatcagcttt ggcatccgct 300  
 gcaacctggg cgtggccatc gtgtccatgg tcaacaacag cacaaccac cgtggggggc 360  
 acgtgggtgg gcagaaagcc cagttcaact gggatccaga gactgtcggc ctcatcatg 420  
 gtcctttttt ctggggctac attgtcactc agattcctgg aggatttatc tgccaaaaat 480  
 tcgcagccaa cagggtcttt ggctttgcca ttgtggctac ctccacccta aacatggtga 540  
 tcccttcagc agccccgctt cactatggct gtgtcatctt cgtgaggatc cttcagggat 600  
 tgggtggagg gggtcacata cctgcttgcc atggcatctg gagcaaattg gcccctccct 660  
 tagaacggag tcggctggca acgacagcct tttgcggctc ctatgctggg gcggtggttg 720  
 ccattgccctt ggctggggct cttgtgcagt attcaggatg gagttctgtc ttctatgtct 780  
 atggcagctt cgggatcttt tgggtacctg tctggttgct tgtctcctat gagtcaccgg 840  
 cactgcaccc cagcatctct gaggaggagc gcaaatacat tgaggatgcc atcggggaga 900  
 gcgccaagct catgaacctt gttacgaagt ttaacacacc ctggaggcgc ttctttacgt 960  
 ccatgcccgct ctatgccatc atcgttgcca acttttgccg cagctggacc ttctacctgc 1020  
 tcctcatctc tcagcccgc cactttgaag aagtgttcgg ctttgagatc agcaagggtg 1080  
 ggctggtgtc ggcgtgcctt caccttgtca tgaccatcat cgtacccatt ggaggccaga 1140  
 tcgctgactt tttgcgcagt cgtcacataa tgtccactac caacgtgcca aagctcatga 1200  
 actgcggggg tttcgggatg gaagccacgc tgctgctggg ggtcggatac tcgactcca 1260  
 agggcgtggc catctccttc ctggtcctgg ctgtgggctt cagtggcttt gccatctctg 1320  
 ggtttaacgt gaaccacttg gacatcgccc ctgcctatgc cagcatcttg atgggcattt 1380  
 ccaatggcgt gggcacactg tctgggatgg tgtgccccat catcgtgggt gcaatgacca 1440  
 agcacaagac gcgggaggag tggcagtagc tgttcctcat agcctccctg gtgcactacg 1500  
 gcggtgtcat cttctatggg gtctttgctt cgggagagaa gcagccgtgg gcagagccgg 1560  
 aggagatgag cgaggagaag tgtggctttg ttggccacga ccagctggct ggcagtgacg 1620  
 aaagtgaat ggaggacgag gctgagcccc caggggcgcc ccccgcccg cctccgtcct 1680  
 acggggccac acacagcaca gtgcagcctc cgaggcccc gcccctgtc cgggactact 1740  
 gaccacgggc ctcccactgt ggggcagttt ccaggacttc cactccatac acctctagcc 1800  
 tgagcggcag tgtcgaggaa cccactcct cccctgcctc aggttaaga tgcaagtct 1860  
 cccttgttcc cagtgtgtc cgaccagccc tctttccctc tcaactgcct cctgcggggg 1920  
 gtgaagctgc acactagcag tttcaaggat acccagactc ccctgaaagt cgttctccgc 1980  
 ttgtttctgc ctgtgtgggc tcaaactctc cctttgaggg ctttatttgg agggacagtt 2040  
 caacctcttc ctctcttgtg gttttgaggt ttcacccct cccccaagac cccagggatt 2100  
 ctcaggctac cccgagatta ttcaggtgg cccctactca gaagacttca tggctcgtcct 2160  
 ctattagttt caaggctcgc ctaaccaatt ctacattttt ccaagctggt ttaacctaac 2220  
 caccaatgcc gccgttcccc ggactgattc tcaccagcgt ttctgaggga aaatggcgg 2280  
 ttcaagtccc cccaccccc ttttcttccc tcgtccctc accagcacac tttgcggggc 2340  
 cttgacctta gtttagtaca atcattgtcc agggaaatgg ccaaaatggc tctgtcacc 2400  
 ccgtgctctt tttctgactc agttttcagg tctcagtagt ggctgcccc aaagtattaat 2460  
 tcagcggctc gaggccacct ctctctcccc gtggtggttt caggatcccc ctgcaccccc 2520  
 ccccccaaaa tcttgcact ttattctcct ggggtggttc aggcgcctc cggtttctca 2580  
 gtggccattt gttgtgtgtc cctcaggggc taaatgatc caaatctggg gtgcttcccc 2640  
 tcatagacac ccctctctca acgtagaaat ctgggtgggg gtgaggtgtg tgagagaagt 2700  
 tacagaatcc caggaaaggg agcggggctg ggaggagagg gttgttctc gggcaggggtc 2760  
 gtgtcttggt gtctgtctct gtgacgtaaa tcctgcctg cccacccca ctcccaataa 2820  
 acgctctggt gtacgg 2836

<210> 8  
 <211> 560  
 <212> PRT  
 <213> Mus musculus

<400> 8

Met	Glu	Phe	Arg	Gln	Glu	Glu	Phe	Arg	Lys	Leu	Ala	Gly	Arg	Ala	Leu
1				5					10					15	
Gly	Arg	Leu	His	Arg	Leu	Leu	Glu	Lys	Arg	Gln	Glu	Gly	Ala	Glu	Thr
			20					25					30		
Leu	Glu	Leu	Ser	Ala	Asp	Gly	Arg	Pro	Val	Thr	Thr	His	Thr	Arg	Asp
		35					40					45			
Pro	Pro	Val	Val	Asp	Cys	Thr	Cys	Phe	Gly	Leu	Pro	Arg	Arg	Tyr	Ile
		50				55					60				
Ile	Ala	Ile	Met	Ser	Gly	Leu	Gly	Phe	Cys	Ile	Ser	Phe	Gly	Ile	Arg
65					70					75					80
Cys	Asn	Leu	Gly	Val	Ala	Ile	Val	Ser	Met	Val	Asn	Asn	Ser	Thr	Thr
				85					90					95	
His	Arg	Gly	Gly	His	Val	Val	Val	Gln	Lys	Ala	Gln	Phe	Asn	Trp	Asp
			100					105					110		
Pro	Glu	Thr	Val	Gly	Leu	Ile	His	Gly	Ser	Phe	Phe	Trp	Gly	Tyr	Ile
		115					120					125			
Val	Thr	Gln	Ile	Pro	Gly	Gly	Phe	Ile	Cys	Gln	Lys	Phe	Ala	Ala	Asn
		130				135					140				
Arg	Val	Phe	Gly	Phe	Ala	Ile	Val	Ala	Thr	Ser	Thr	Leu	Asn	Met	Leu
145					150					155					160
Ile	Pro	Ser	Ala	Ala	Arg	Val	His	Tyr	Gly	Cys	Val	Ile	Phe	Val	Arg
			165						170					175	
Ile	Leu	Gln	Gly	Leu	Val	Glu	Gly	Val	Thr	Tyr	Pro	Ala	Cys	His	Gly
		180					185						190		
Ile	Trp	Ser	Lys	Trp	Ala	Pro	Pro	Leu	Glu	Arg	Ser	Arg	Leu	Ala	Thr
		195				200						205			
Thr	Ala	Phe	Cys	Gly	Ser	Tyr	Ala	Gly	Ala	Val	Val	Ala	Met	Pro	Leu
	210					215					220				
Ala	Gly	Val	Leu	Val	Gln	Tyr	Ser	Gly	Trp	Ser	Ser	Val	Phe	Tyr	Val
225					230					235					240
Tyr	Gly	Ser	Phe	Gly	Ile	Phe	Trp	Tyr	Leu	Phe	Trp	Leu	Leu	Val	Ser
				245					250					255	

Tyr Glu Ser Pro Ala Leu His Pro Ser Ile Ser Glu Glu Glu Arg Lys  
 260 265 270  
 Tyr Ile Glu Asp Ala Ile Gly Glu Ser Ala Lys Leu Met Asn Pro Val  
 275 280 285  
 Thr Lys Phe Asn Thr Pro Trp Arg Arg Phe Phe Thr Ser Met Pro Val  
 290 295 300  
 Tyr Ala Ile Ile Val Ala Asn Phe Cys Arg Ser Trp Thr Phe Tyr Leu  
 305 310 315 320  
 Leu Leu Ile Ser Gln Pro Ala Tyr Phe Glu Glu Val Phe Gly Phe Glu  
 325 330 335  
 Ile Ser Lys Val Gly Leu Val Ser Ala Leu Pro His Leu Val Met Thr  
 340 345 350  
 Ile Ile Val Pro Ile Gly Gly Gln Ile Ala Asp Phe Leu Arg Ser Arg  
 355 360 365  
 His Ile Met Ser Thr Thr Asn Val Arg Lys Leu Met Asn Cys Gly Gly  
 370 375 380  
 Phe Gly Met Glu Ala Thr Leu Leu Leu Val Val Gly Tyr Ser His Ser  
 385 390 395 400  
 Lys Gly Val Ala Ile Ser Phe Leu Val Leu Ala Val Gly Phe Ser Gly  
 405 410 415  
 Phe Ala Ile Ser Gly Phe Asn Val Asn His Leu Asp Ile Ala Pro Arg  
 420 425 430  
 Tyr Ala Ser Ile Leu Met Gly Ile Ser Asn Gly Val Gly Thr Leu Ser  
 435 440 445  
 Gly Met Val Cys Pro Ile Ile Val Gly Ala Met Thr Lys His Lys Thr  
 450 455 460  
 Arg Glu Glu Trp Gln Tyr Val Phe Leu Ile Ala Ser Leu Val His Tyr  
 465 470 475 480  
 Gly Gly Val Ile Phe Tyr Gly Val Phe Ala Ser Gly Glu Lys Gln Pro  
 485 490 495  
 Trp Ala Glu Pro Glu Glu Met Ser Glu Glu Lys Cys Gly Phe Val Gly  
 500 505 510  
 His Asp Gln Leu Ala Gly Ser Asp Glu Ser Glu Met Glu Asp Glu Ala  
 515 520 525  
 Glu Pro Pro Gly Ala Pro Pro Ala Pro Pro Pro Ser Tyr Gly Ala Thr  
 530 535 540  
 His Ser Thr Val Gln Pro Pro Arg Pro Pro Pro Pro Val Arg Asp Tyr  
 545 550 555 560

<210> 9  
 <211> 3946  
 <212> DNA  
 <213> Homo sapiens

<400> 9  
 cgttttaaag ccatcagatt tgagagcaat aagtcttcaa aaccgggaat ttacattggt 60  
 tttcagctga ccgacttcca ggaaaaggac tcaaccgcat ctacccaaat accgtggcac 120  
 tgcttgcgct ctttgccacc ggatactccc cttccaatga gactttctga ttgtgtctac 180  
 caactctcct attaggaaac ccgtgggttg catgcagcta ttctgttgta ttctcattct 240  
 cactctccct cccttctctc actctcactc ttgctggagg cgagccacta ccattctgct 300  
 gagaaggaaa agcccgcaac tactttaaga gattaagaca atatgcgcaa tcctcgctt 360  
 tcctagcaat cactatttta atctggcaag aactgacaac agtctttgca agaattggaat 420  
 ccgtaaaaca aaggattttg gccccaggaa aagaggggct aaagaatttt gctggaaaat 480  
 cactcggcca gatctacagg gtgctggaga agaagcaaga caccggggag acaatcgagc 540  
 tgacggagga tgggaagccc ctgaggtgc ccgagaggaa ggcgcgctg tgcgactgca 600  
 cgtgcttcgg cctgccccgc cgctacatta tcgccatcat gagcggcctg ggcttctgca 660  
 tctccttcgg tatccgctgc aacctgggcg tggccattgt ggacatggtc aacaacagca 720  
 ccatccaccg cgggggcaag gtcatacagg agaaagccaa attcaactgg gacccggaaa 780  
 ccgtggggat gatccacggt tccttctttt ggggctacat catcactcag attccgggag 840  
 gctacatcgc gtctcggctg gcagccaaca gggttttcgg agctgccata cttcttacct 900  
 ctaccctaaa tatgctaatt ccatcagcag ccagagtgc ttatggatgt gtcattctttg 960  
 tcagaatact gcagggactt gttgaggggt tgacctacc agcatgtcat gggatatgga 1020  
 gcaaatgggc cccacctcta gagaggagta gactggcaac cacctccttt tgtggttcct 1080  
 atgcgggagc tgtgattgca atgcctttag ctggcattct tgtgcagtac actggctggt 1140  
 cttcagtgtt ttatgtctac ggaagctttg gaatggtctg gtacatgttt tggcttttgg 1200  
 tgtcttatga aagtcttgca aagcatccta ctattacaga tgaagaacgt aggtacatag 1260  
 aagaaagcat tggagagagt gcaaatcttt taggtgcaat ggaaaaattc aagactccat 1320  
 ggaggaagtt ttttacatcc atgccagtct atgcaataat tggtgcaaac ttctgcagaa 1380  
 gctggacttt ttattttatt cttattagtc agccagcata ttttgaggaa gtctttggat 1440  
 ttgaaattag caaggttggt atgctatctg ctgtgccaca cttagtaatg acaattattg 1500  
 tgcttattgg gggacaaatt gcagattttt taagaagcaa gcagattctt tcaactacga 1560  
 cagtgaagaa gatcatgaat tgtggtggtt ttggcatgga agccacactg ctcttggtcg 1620  
 ttggctattc tcatactaga ggggtagcaa tctcattctt ggtacttgca gtgggattgca 1680  
 gtggatttgc tatatctggt ttcaatgtta accacttgga tatcgctcca agatatgcca 1740  
 gtatcttaat gggcatttctg aatggtgttg gcacattgtc aggaatggtt tgtcctatca 1800  
 ttgttggtgc aatgacaaag aataagtcac gtgaagagtg gcagtatgtc ttcttgatcg 1860  
 ctgccctagt ccactatggt ggagttatat tttatgcaat atttgctca ggagagaaac 1920  
 aacctggggc agaccgggag gaaacaagtg aagaaaaatg tggatttatt catgaagatg 1980  
 aactcgatga agaaacaggg gacattactc aaaattatat aaattatggt accaccaagt 2040  
 cttatggtgc cacaacacag gccaatggag gttggcctag tggttgggaa aagaaagagg 2100  
 aatttgtaca aggagaagta caagactcac atagctataa ggaccgagtt gattattcat 2160  
 aacaaaacta attattggat ttatttttag tgtttgtgat taaattcatt gtgattgcac 2220  
 aaaaatttta aaaacacgtg atgtaaactt gcaagcatat caaccaggca agtcttgctg 2280  
 taaaaatgaa aacaaaacaa acccatgagg ttaccatcaa gtgcaatctg taaaattgtg 2340  
 aagttccatc atttccattc aagtcattca ttcttgcat tgtgacttaa aggttgactg 2400  
 gtcaaaattg tagaaacaag tagttaccca ttggattcat atgagctaaa actcatcact 2460  
 atttactaaa gcacaacatc tcaccctaca aaagtttaaga agccaaagct acttgatcat 2520  
 gcaaaatgca cttatatatt tgttacactg tattgcaaga tagcacacag aagttggctg 2580  
 cgtcaagtag aggcgacatt tattaagtga aaatcatgga gttgggatat ctctcaatta 2640  
 aagaaatata ttgtgaacta tcagctacaa agttgtactg aataactatt agaattgcat 2700  
 aatgtgagat attttgtagg tcctcaaaag gaatatcttg cagtgttttc tatgaaatgc 2760

```

ttgggcacaa acacttattt ctgtgaaaga gaacatgtaa gttgaggggt atgcttcatg 2820
ttcttccatc catttaccta atagtatgaa acagttcaca tttcaataaa atcaaacctt 2880
tcatgtagcg tatcacataa cttttttgca aaaaatataa aaagaaataa acttcaatgt 2940
atTTTTtatt acaactttgt actggttgta acttgcatta gaaaaaaaaa agagatatat 3000
aaaccacaaa gaatctaata agaaatttat tatggagata tagcccttaa aatgcaatat 3060
taagaacaaa gaaatagaaa atggtttaga tatctttctt ccttcataat taaatactat 3120
atgaaacttg tgccacagag ctatatgtaa tatgaaaaga ttaacttcat agagatatgt 3180
taagtaggta atTTTTtatt ttaaagtcct attaagaaat atttgtctta aatatatagg 3240
acaatacatt atattaaaaat ggtctctctc tatatatatc tgtatatctt atacatgtcc 3300
atacacagaa acataataaa caatcttcac acgaaaccaa aaatagcata cacctaattgt 3360
tgggttaggg aattgcaatt tctactttca tagagtcata gaattttagg tggggaagag 3420
gcattttgct tgtcatttct taatataaact caacaagaat tgcaacattt gtgtaccaag 3480
caataagtgc aatgcataaa atttctctgc tgtatattac cttcattttg cttgtagtag 3540
ctgtttgggt gggttgaata attttatttt tcttttaaaa aagctaacat cagacccctt 3600
tataatgtcc taaaattatg ataatacatt tcccaattca actcaaaata ttattgggtg 3660
atTTTgtcta ttctggatat ttgatctggt taatgtactg tgctagtgcac tggaggccct 3720
gctactgcaa atataaaaacc taaagtttgt ttaaaaaaat gcaaatcatt ctttacctta 3780
agaaaaaaaa aatacccttt gctttgtgcc tcaaagtgat gtaatgtgat cacagctttt 3840
gttgtgttga atgaaaatat gtggactgtc attttgttgc agcaaaaaag tgttaataaa 3900
atgctctatt tatctttttt taaaaaaaaa aaaaaaaaaa aaaaaa 3946

```

<210> 10  
 <211> 582  
 <212> PRT  
 <213> Homo sapiens

<400> 10  
 Met Glu Ser Val Lys Gln Arg Ile Leu Ala Pro Gly Lys Glu Gly Leu  
 1 5 10 15  
 Lys Asn Phe Ala Gly Lys Ser Leu Gly Gln Ile Tyr Arg Val Leu Glu  
 20 25 30  
 Lys Lys Gln Asp Thr Gly Glu Thr Ile Glu Leu Thr Glu Asp Gly Lys  
 35 40 45  
 Pro Leu Glu Val Pro Glu Arg Lys Ala Pro Leu Cys Asp Cys Thr Cys  
 50 55 60  
 Phe Gly Leu Pro Arg Arg Tyr Ile Ile Ala Ile Met Ser Gly Leu Gly  
 65 70 75 80  
 Phe Cys Ile Ser Phe Gly Ile Arg Cys Asn Leu Gly Val Ala Ile Val  
 85 90 95  
 Asp Met Val Asn Asn Ser Thr Ile His Arg Gly Gly Lys Val Ile Lys  
 100 105 110  
 Glu Lys Ala Lys Phe Asn Trp Asp Pro Glu Thr Val Gly Met Ile His  
 115 120 125  
 Gly Ser Phe Phe Trp Gly Tyr Ile Ile Thr Gln Ile Pro Gly Gly Tyr  
 130 135 140  
 Ile Ala Ser Arg Leu Ala Ala Asn Arg Val Phe Gly Ala Ala Ile Leu  
 145 150 155 160

Leu Thr Ser Thr Leu Asn Met Leu Ile Pro Ser Ala Ala Arg Val His  
 165 170 175  
 Tyr Gly Cys Val Ile Phe Val Arg Ile Leu Gln Gly Leu Val Glu Gly  
 180 185 190  
 Val Thr Tyr Pro Ala Cys His Gly Ile Trp Ser Lys Trp Ala Pro Pro  
 195 200 205  
 Leu Glu Arg Ser Arg Leu Ala Thr Thr Ser Phe Cys Gly Ser Tyr Ala  
 210 215 220  
 Gly Ala Val Ile Ala Met Pro Leu Ala Gly Ile Leu Val Gln Tyr Thr  
 225 230 235 240  
 Gly Trp Ser Ser Val Phe Tyr Val Tyr Gly Ser Phe Gly Met Val Trp  
 245 250 255  
 Tyr Met Phe Trp Leu Leu Val Ser Tyr Glu Ser Pro Ala Lys His Pro  
 260 265 270  
 Thr Ile Thr Asp Glu Glu Arg Arg Tyr Ile Glu Glu Ser Ile Gly Glu  
 275 280 285  
 Ser Ala Asn Leu Leu Gly Ala Met Glu Lys Phe Lys Thr Pro Trp Arg  
 290 295 300  
 Lys Phe Phe Thr Ser Met Pro Val Tyr Ala Ile Ile Val Ala Asn Phe  
 305 310 315 320  
 Cys Arg Ser Trp Thr Phe Tyr Leu Leu Leu Ile Ser Gln Pro Ala Tyr  
 325 330 335  
 Phe Glu Glu Val Phe Gly Phe Glu Ile Ser Lys Val Gly Met Leu Ser  
 340 345 350  
 Ala Val Pro His Leu Val Met Thr Ile Ile Val Pro Ile Gly Gly Gln  
 355 360 365  
 Ile Ala Asp Phe Leu Arg Ser Lys Gln Ile Leu Ser Thr Thr Thr Val  
 370 375 380  
 Arg Lys Ile Met Asn Cys Gly Gly Phe Gly Met Glu Ala Thr Leu Leu  
 385 390 395 400  
 Leu Val Val Gly Tyr Ser His Thr Arg Gly Val Ala Ile Ser Phe Leu  
 405 410 415  
 Val Leu Ala Val Gly Phe Ser Gly Phe Ala Ile Ser Gly Phe Asn Val  
 420 425 430  
 Asn His Leu Asp Ile Ala Pro Arg Tyr Ala Ser Ile Leu Met Gly Ile  
 435 440 445  
 Ser Asn Gly Val Gly Thr Leu Ser Gly Met Val Cys Pro Ile Ile Val

450		455		460
Gly Ala Met Thr Lys Asn Lys Ser Arg Glu Glu Trp Gln Tyr Val Phe				
465		470		475
Leu Ile Ala Ala Leu Val His Tyr Gly Gly Val Ile Phe Tyr Ala Ile				
	485		490	495
Phe Ala Ser Gly Glu Lys Gln Pro Trp Ala Asp Pro Glu Glu Thr Ser				
	500		505	510
Glu Glu Lys Cys Gly Phe Ile His Glu Asp Glu Leu Asp Glu Glu Thr				
	515		520	525
Gly Asp Ile Thr Gln Asn Tyr Ile Asn Tyr Gly Thr Thr Lys Ser Tyr				
	530		535	540
Gly Ala Thr Thr Gln Ala Asn Gly Gly Trp Pro Ser Gly Trp Glu Lys				
	545		550	555
Lys Glu Glu Phe Val Gln Gly Glu Val Gln Asp Ser His Ser Tyr Lys				
	565		570	575
Asp Arg Val Asp Tyr Ser				
	580			

&lt;210&gt; 11

&lt;211&gt; 3982

&lt;212&gt; DNA

&lt;213&gt; Rattus norvegicus

&lt;400&gt; 11

```

agacagtaag gttcttttgc ttttttccct tacacaagga ttcgatgacg tttttgggtca 60
atctgattaa aagacagcgg atttggttgc gttaagactt caaaaccggg aatttacgtt 120
gtttttcggg gaggtgactt ccagaacggg gactcatcag caccgcacca aataccacgg 180
cactgcgcgc gccctcggcc accggatcct ccccttccaa tgagactttg tgactgtgtg 240
taccaattct cctattagga aaccctgagg ctgaatgcag ctattccgtt gtactctctt 300

tctcgtcttc cctcccctct ccaactcaca gccttgctga aaagctcatc tctgctgaga 360
agaaaacgtt ctaccttaac ctattaagac tatgcgcaga actcgccttt catagccatc 420
acaatttaaa tctggttaagg ctggacacga gtctttacaa gaatggagtc ggtaaaacaa 480
aggatttttg ccccggggaa agaggggata aagaattttg ctggaaaatc cctcggacag 540
atctacaggg tgctggagaa gaagcaggat aaccgagaga ccatcgagct gacagaggac 600
ggcaagcccc tggaggtgcc tgagaagaag gctccgctat gcgactgtac gtgcttcggc 660
ctgccgcgcc gctacatcat agccatcatg agcggcctcg gcttctgcat ctcctttggt 720
atccgctgta acctgggtgt ggccattgtg gacatggtca acaacagcac catccaccgg 780
ggtggcaaaag ttatcaagga gaaagccaag ttttaactggg accccgagac tgtggggatg 840
attcacgggt cgttcttctg gggctatata atcacgcaga ttccggggcg atacatcgca 900
tcgcgactgg ctgctaaccg ggtcttttgg gctgccatac tgcttacctc taccctcaat 960
atgctgatcc catctgcagc cagagtgcac tatggatgcg tcatctttgt tagaatattg 1020
caaggacttg tggagggcgt cacctaccca gcctgtcacg ggatatggag caagtgggccc 1080
cctcctttgg agaggagtag gttggctacc acctccttct gtggttccta tgctggagca 1140
gtcattgcaa tgcccctagc tgggtatcctg gtgcagtaca ctggatggtc ttcagtattt 1200
tacgtatatg gaagcttttg tatggtctgg tatatgttct ggcttctggt gtcttacgag 1260
agccccgcaa agcatccaac cataacagac gaagaacgta ggtacataga agagagcatc 1320
ggggagagcg caaatctgtt aggagcaatg gagaaattca agaccccatg gaggaagttt 1380

```

```

ttcacatcca tgcccgtcta tgcgataatt gttgcaaact tctgcaggag ttggactttt 1440
tatttactgc tcatcagtca accagcttat ttcgaggagg tttttggatt tgaaatcagc 1500
aagggtggca tgttgtctgc ggtcccacac ctggtcatga caatcattgt gcctatcggg 1560
gggcaaattg cagactttct aaggagcaag caaattcttt caacaactac agtgcgaaaag 1620
atcatgaact gcgggggttt tggcatggaa gccacactgc ttctggttgt tggctactct 1680
catactagag ggggtggccat ctcttctctg gtgcttgacg tgggattcag tggatttgct 1740
atctctgggt tcaatgtgaa ccacttggat attgccccga gatatgccag tatcttaatg 1800
ggcatttcaa atggtgttgg cacgctgtcg ggaatggctc gcccgatcat tgttggtgca 1860
atgacgaaga acaagtcccg tgaagaatgg cagtatgtct tcctcatcgc tgcactgggtc 1920
cactatgggt gagtcatatt ttatgcacta tttgcctcag gagagaagca accttgggca 1980
gacctgagg aaacaagcga agaaaagtgt ggcttcattc atgaagatga actggatgaa 2040
gaaacggggg acatcactca gaattacata aattacggta ccaccaaatc ctacggcgcc 2100
acctcacagg agaacggagg ctggccctaac ggctgggaga aaaaggaaga atttgtgcaa 2160
gaaagtgcgc aagacgcgta ctctataaag gaccgagatg attattcata acgaagctag 2220
ttgctggatt cttttgtagt gtttgtgatt aaattaattg tgattgcaca aaatcatttt 2280
aagaaatgtg gtgtaaacad gtaaacadat caaccaagca agtcttgctg ttcaaaaaat 2340
aataataata tgaattcaaa acagaccgtg agagtcccat caagtgcaat ctgtggcggc 2400
agtccagtga cgccatttcc attcaggcca ttcgtccttt tcgtttgtga tttaaagggt 2460
tcctgtagaa ataagtaggt attcgttggg tccatcacca cgtagagag tacaactaca 2520
acagttggca catgtcatcc tacggaagtt aggaagccaa agctactgga ttatgtgaac 2580
tgcatattac tattttatc actggactgc aaaatatccc agggaaatcc tgtctagaga 2640
catagtagaa ctggaaagat ggctagattg ggtactgacg ataatcattg tgtgtatatc 2700
atggagtggc tatatctttt aattggagaa ctatattgta tagctagcaa aattgtactg 2760
aattattact aggagtgcac agtgtgtgat attttgtgat cttccaaaag cttatcttgc 2820
agtgttttgt gaaacgcttg ggcacaaaca cttattttta tgaacaagag cttgtaaagg 2880
gaggagtatg ctccatgctc tcccattcac tacctgacag tatcaaacct tcacatttca 2940
atgaaatcca acgtccatgt aacatatcac atgacttttt ttgcaaaaaa gaatataaga 3000
agaaatagac ttcaatgtat tttttattac aactttgtac tggttgtaac ttgcattagg 3060
aaaaatgatt aatatatgta taatcgtaaa gaatctaata aaaatttact atgaagatat 3120
agcccttaaa atgcaatatt aacaacaaaa atatatagaa aatttagata atcttccttg 3180
ataactagag actatatgga actcacacca caaagctata tataatatga aaagataaac 3240
aatagagatt gtatatgtag acgattttat gacctaatgt cccatttaag aggtatttgt 3300
cttgagtata tagtacaaag tatattaaaa ttatatctac atccctgtat atcttataca 3360
tatccactca cacaaacata acaaataact ttcacacaga accaaaaaca agcatacacc 3420
taatgttggg tttggggatt gcaatttcta ctttcataga gtcatagaat tttagatggg 3480
aaaaaaaaag gcattttgct cgtcatttct taatataatt aattcaacag gaactgcaac 3540
atttgtgtac caagcaataa gtgcgaagca taaacctgct gtgtgtaaac tatccccata 3600
ctgcttggg tagcactgat ttctttcttt taaagaactt aacatcggag ctctttacaa 3660
tgttttgcgc tgataagaat gcacatccca atttaacgca aagtgtcacc tgggtgtgtt 3720
acctgtctgt tttgggtatt tggctgtgtt ggtgtcctgt gctcttgact ggaggccctg 3780
ctactgcgaa tataaaacgt gaagtttgtt tctaaatgca aaccactcct gaccttaaga 3840
aactaaagtc cctctctgct ttgtgtctcc aagtactatc atgtgaccat aacccttgct 3900
gtgctgagta aaaagatgtg aactgtcatt ttgttgctgc gaagcaagtg ttaataaaaat 3960
gttctattta aaaaaaaaaa aa 3982

```

<210> 12

<211> 582

<212> PRT

<213> Rattus norvegicus

<400> 12

Met Glu Ser Val Lys Gln Arg Ile Leu Ala Pro Gly Lys Glu Gly Ile  
1 5 10 15

Lys Asn Phe Ala Gly Lys Ser Leu Gly Gln Ile Tyr Arg Val Leu Glu  
20 25 30

Lys Lys Gln Asp Asn Arg Glu Thr Ile Glu Leu Thr Glu Asp Gly Lys  
 35 40 45  
 Pro Leu Glu Val Pro Glu Lys Lys Ala Pro Leu Cys Asp Cys Thr Cys  
 50 55 60  
 Phe Gly Leu Pro Arg Arg Tyr Ile Ile Ala Ile Met Ser Gly Leu Gly  
 65 70 75 80  
 Phe Cys Ile Ser Phe Gly Ile Arg Cys Asn Leu Gly Val Ala Ile Val  
 85 90 95  
 Asp Met Val Asn Asn Ser Thr Ile His Arg Gly Gly Lys Val Ile Lys  
 100 105 110  
 Glu Lys Ala Lys Phe Asn Trp Asp Pro Glu Thr Val Gly Met Ile His  
 115 120 125  
 Gly Ser Phe Phe Trp Gly Tyr Ile Ile Thr Gln Ile Pro Gly Gly Tyr  
 130 135 140  
 Ile Ala Ser Arg Leu Ala Ala Asn Arg Val Phe Gly Ala Ala Ile Leu  
 145 150 155 160  
 Leu Thr Ser Thr Leu Asn Met Leu Ile Pro Ser Ala Ala Arg Val His  
 165 170 175  
 Tyr Gly Cys Val Ile Phe Val Arg Ile Leu Gln Gly Leu Val Glu Gly  
 180 185 190  
 Val Thr Tyr Pro Ala Cys His Gly Ile Trp Ser Lys Trp Ala Pro Pro  
 195 200 205  
 Leu Glu Arg Ser Arg Leu Ala Thr Thr Ser Phe Cys Gly Ser Tyr Ala  
 210 215 220  
 Gly Ala Val Ile Ala Met Pro Leu Ala Gly Ile Leu Val Gln Tyr Thr  
 225 230 235 240  
 Gly Trp Ser Ser Val Phe Tyr Val Tyr Gly Ser Phe Gly Met Val Trp  
 245 250 255  
 Tyr Met Phe Trp Leu Leu Val Ser Tyr Glu Ser Pro Ala Lys His Pro  
 260 265 270  
 Thr Ile Thr Asp Glu Glu Arg Arg Tyr Ile Glu Glu Ser Ile Gly Glu  
 275 280 285  
 Ser Ala Asn Leu Leu Gly Ala Met Glu Lys Phe Lys Thr Pro Trp Arg  
 290 295 300  
 Lys Phe Phe Thr Ser Met Pro Val Tyr Ala Ile Ile Val Ala Asn Phe  
 305 310 315 320  
 Cys Arg Ser Trp Thr Phe Tyr Leu Leu Leu Ile Ser Gln Pro Ala Tyr  
 325 330 335

Phe Glu Glu Val Phe Gly Phe Glu Ile Ser Lys Val Gly Met Leu Ser  
                   340                                  345                                  350  
 Ala Val Pro His Leu Val Met Thr Ile Ile Val Pro Ile Gly Gly Gln  
                   355                                  360                                  365  
 Ile Ala Asp Phe Leu Arg Ser Lys Gln Ile Leu Ser Thr Thr Thr Val  
                   370                                  375                                  380  
 Arg Lys Ile Met Asn Cys Gly Gly Phe Gly Met Glu Ala Thr Leu Leu  
 385                                  390                                  395                                  400  
 Leu Val Val Gly Tyr Ser His Thr Arg Gly Val Ala Ile Ser Phe Leu  
                                   405                                  410                                  415  
 Val Leu Ala Val Gly Phe Ser Gly Phe Ala Ile Ser Gly Phe Asn Val  
                                   420                                  425                                  430  
 Asn His Leu Asp Ile Ala Pro Arg Tyr Ala Ser Ile Leu Met Gly Ile  
                   435                                  440                                  445  
 Ser Asn Gly Val Gly Thr Leu Ser Gly Met Val Cys Pro Ile Ile Val  
                   450                                  455                                  460  
 Gly Ala Met Thr Lys Asn Lys Ser Arg Glu Glu Trp Gln Tyr Val Phe  
 465                                  470                                  475                                  480  
 Leu Ile Ala Ala Leu Val His Tyr Gly Gly Val Ile Phe Tyr Ala Leu  
                                   485                                  490                                  495  
 Phe Ala Ser Gly Glu Lys Gln Pro Trp Ala Asp Pro Glu Glu Thr Ser  
                   500                                  505                                  510  
 Glu Glu Lys Cys Gly Phe Ile His Glu Asp Glu Leu Asp Glu Glu Thr  
                   515                                  520                                  525  
 Gly Asp Ile Thr Gln Asn Tyr Ile Asn Tyr Gly Thr Thr Lys Ser Tyr  
                   530                                  535                                  540  
 Gly Ala Thr Ser Gln Glu Asn Gly Gly Trp Pro Asn Gly Trp Glu Lys  
 545                                  550                                  555                                  560  
 Lys Glu Glu Phe Val Gln Glu Ser Ala Gln Asp Ala Tyr Ser Tyr Lys  
                                   565                                  570                                  575  
 Asp Arg Asp Asp Tyr Ser  
                   580

<210> 13

<211> 2528

<212> DNA

<213> Mus musculus

<400> 13

ggcacgaggc tcagtcttaa ttccactctg ccactctgcc gcagagcaca attacgccgg 60

```

cgcgatggga ggagaccatg ttaaggcagg aagctaacag cagccgctca cctgaggcct 120
aggaagctcc caaggggtct gagagctatg agctctgatc agcaaagtca ccattttaga 180
cagtaggggt cttttgcttt ttcccttaca caaggggtcg atgacgtttc tgggtcaatct 240
gattaaaaga cagcggattt gattgcgata agacttcaaa accgggaatt tacgttgttt 300
ttcgggtgagg tgacttccag aacagggact catcagcacc cgcccaaata ccacggcact 360
gcgcgcgccc tcggccaccg gatcctcccc ttccaatgag actttgtgac tgtgtgtacc 420
aattctccta ttaggaaacc cgtgggctgc atgcagctat tctgtgtgac tctctttctc 480
gccctccctc ccctctccaa ctcacagcct tgctggaaag ctcacctctg ctgagaagaa 540
aaagctctac cttaaccaac taagactatg cgcagaatcc gtctttcata gccacaacaa 600
tttaaactct gtaaggctgg acaccagtct ttacaagaat ggagtcggta aaacaaagga 660
ttttggcccc ggggaaagag gggataaaga attttgctgg aaaatccctc ggacagatct 720
acagggtgct ggagaagaag caggacaacc gagagacat cgagctgaca gaggacggtg 780
agccctgga ggtgcctgag aagaaggctc cgctatgca ctgcacgtgc ttcggcctgc 840
cgcgccgcta catcatagcc atcatgagcg gcctcggtt ctgcatatcc ttcggcatcc 900
gctgtaacct gggcgtggcc atcgtggaca tggtaacaa cagcactatc caccgcggag 960
gcaaagttat caaggagaaa gccaaattta actgggaccc cgagaccgtg gggatgatcc 1020
acggatcggt cttctggggc tatatcatca cccagattcc aggaggatat atcgcatcgc 1080
ggctggctgc taaccgggtc tttggggctg cgatactgct cacctctacc ctcaatatgc 1140
tgatcccatc tgcagccaga gtgcattatg gatgtgtcat ctttgtagg atattgcaag 1200
catttgtgga ggggtgcacc taccagcct gtcattggat atggagcaag tgggcccctc 1260
ccttgagag gagtaggtt gctacaacct cctttgtgg ttcctatgct ggagcagtca 1320
ttgcaatgcc cttagctggt atccttgtgc agtacactgg atggctcgta gtattttatg 1380
tgtatggaag ctttgcatg gtctgtgaca tgttctggct tctggtgtct tatgagagcc 1440
ctgcaaagca tctaccatt acagatgaag aacgtaggta catagaggag agcattggag 1500
agagcgaaa tctgctaggt gcaatggaaa aatttaagac cccatggagg aagtttttca 1560
catccatgcc cgtctacgag ataattgttg ccaacttctg caggagctgg actttttatt 1620
tactgctcat cagtcagcca gcttattttt aggaggtttt tggatttgaa atcagcaagg 1680
ttggcatgtt gtctgcagtc cctcaccttg tcatgacaat cattgtgcct atcggggggc 1740
aaattgcaga tttcctaagg agcaagcaaa ttctctcaac aactacagtg agaaagatca 1800
tgaattgtgg gggttttggc atggaagcca cgctgcttct ggttggtggc tactctcata 1860
ctagaggggt ggccatctcc ttcttggtgc ttgcagtagg attcagtgga tttgctatct 1920
ctggtttcaa tgtaatacac ttggatattg ctccaagata tgccagtatc ttaatgggca 1980
tttcaaattg cgttggcacg ctgtcgggga tggtttgccc tatcattgtt ggtgcaatga 2040
caaagaataa gtcccgtgaa gaatggcagt atgtcttctc cattgtctgca ctcgccact 2100
atggtggagt catattttat gcactatttg cctcaggaga gaaacaacct tgggcagacc 2160
ctgaggaaac aagcgaagaa aaatgtggct tcattcacga agatgaactg gatgaagaaa 2220
cgggggacat cactcagaat tacataaatt acggtaccac caaatcttac ggtgctacct 2280
cacaggagaa tggaggctgg cctaacggct gggagaaaaa ggaagaattt gtgcaagaag 2340
gtgcgcaaga cgcgtacacc tataaggacc gagatgatta ttcataacga tgctagtgc 2400
tggattcatt tgtagtgttt gtgaatcaat taattgtgat tgcacaaaaa taattttaaa 2460
aatgtggtgt gaacatgtaa acatatcaac caagcaagtc ttgctgttca aaaaaaaaaa 2520
aaaaaaaaa 2528

```

&lt;210&gt; 14

&lt;211&gt; 582

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 14

```

Met Glu Ser Val Lys Gln Arg Ile Leu Ala Pro Gly Lys Glu Gly Ile
  1                      5                      10                      15

```

```

Lys Asn Phe Ala Gly Lys Ser Leu Gly Gln Ile Tyr Arg Val Leu Glu
      20                      25                      30

```

```

Lys Lys Gln Asp Asn Arg Glu Thr Ile Glu Leu Thr Glu Asp Gly Lys

```

35				40				45							
Pro	Leu	Glu	Val	Pro	Glu	Lys	Lys	Ala	Pro	Leu	Cys	Asp	Cys	Thr	Cys
50				55				60							
Phe	Gly	Leu	Pro	Arg	Arg	Tyr	Ile	Ile	Ala	Ile	Met	Ser	Gly	Leu	Gly
65				70				75				80			
Phe	Cys	Ile	Ser	Phe	Gly	Ile	Arg	Cys	Asn	Leu	Gly	Val	Ala	Ile	Val
				85				90				95			
Asp	Met	Val	Asn	Asn	Ser	Thr	Ile	His	Arg	Gly	Gly	Lys	Val	Ile	Lys
100								105				110			
Glu	Lys	Ala	Lys	Phe	Asn	Trp	Asp	Pro	Glu	Thr	Val	Gly	Met	Ile	His
115								120				125			
Gly	Ser	Phe	Phe	Trp	Gly	Tyr	Ile	Ile	Thr	Gln	Ile	Pro	Gly	Gly	Tyr
130				135				140							
Ile	Ala	Ser	Arg	Leu	Ala	Ala	Asn	Arg	Val	Phe	Gly	Ala	Ala	Ile	Leu
145				150				155				160			
Leu	Thr	Ser	Thr	Leu	Asn	Met	Leu	Ile	Pro	Ser	Ala	Ala	Arg	Val	His
				165				170				175			
Tyr	Gly	Cys	Val	Ile	Phe	Val	Arg	Ile	Leu	Gln	Gly	Leu	Val	Glu	Gly
180								185				190			
Val	Thr	Tyr	Pro	Ala	Cys	His	Gly	Ile	Trp	Ser	Lys	Trp	Ala	Pro	Pro
195								200				205			
Leu	Glu	Arg	Ser	Arg	Leu	Ala	Thr	Thr	Ser	Phe	Cys	Gly	Ser	Tyr	Ala
210				215								220			
Gly	Ala	Val	Ile	Ala	Met	Pro	Leu	Ala	Gly	Ile	Leu	Val	Gln	Tyr	Thr
225				230				235				240			
Gly	Trp	Ser	Ser	Val	Phe	Tyr	Val	Tyr	Gly	Ser	Phe	Gly	Met	Val	Trp
				245				250				255			
Tyr	Met	Phe	Trp	Leu	Leu	Val	Ser	Tyr	Glu	Ser	Pro	Ala	Lys	His	Pro
260								265				270			
Thr	Ile	Thr	Asp	Glu	Glu	Arg	Arg	Tyr	Ile	Glu	Glu	Ser	Ile	Gly	Glu
275				280				285							
Ser	Ala	Asn	Leu	Leu	Gly	Ala	Met	Glu	Lys	Phe	Lys	Thr	Pro	Trp	Arg
290				295				300							
Lys	Phe	Phe	Thr	Ser	Met	Pro	Val	Tyr	Ala	Ile	Ile	Val	Ala	Asn	Phe
305				310				315				320			
Cys	Arg	Ser	Trp	Thr	Phe	Tyr	Leu	Leu	Leu	Ile	Ser	Gln	Pro	Ala	Tyr
				325				330				335			

Phe Glu Glu Val Phe Gly Phe Glu Ile Ser Lys Val Gly Met Leu Ser  
                   340                                  345                                  350  
 Ala Val Pro His Leu Val Met Thr Ile Ile Val Pro Ile Gly Gly Gln  
                   355                                  360                                  365  
 Ile Ala Asp Phe Leu Arg Ser Lys Gln Ile Leu Ser Thr Thr Thr Val  
                   370                                  375                                  380  
 Arg Lys Ile Met Asn Cys Gly Gly Phe Gly Met Glu Ala Thr Leu Leu  
                   385                                  390                                  395                                  400  
 Leu Val Val Gly Tyr Ser His Thr Arg Gly Val Ala Ile Ser Phe Leu  
                                   405                                  410                                  415  
 Val Leu Ala Val Gly Phe Ser Gly Phe Ala Ile Ser Gly Phe Asn Val  
                                   420                                  425                                  430  
 Asn His Leu Asp Ile Ala Pro Arg Tyr Ala Ser Ile Leu Met Gly Ile  
                   435                                  440                                  445  
 Ser Asn Gly Val Gly Thr Leu Ser Gly Met Val Cys Pro Ile Ile Val  
                   450                                  455                                  460  
 Gly Ala Met Thr Lys Asn Lys Ser Arg Glu Glu Trp Gln Tyr Val Phe  
                   465                                  470                                  475                                  480  
 Leu Ile Ala Ala Leu Val His Tyr Gly Gly Val Ile Phe Tyr Ala Leu  
                                   485                                  490                                  495  
 Phe Ala Ser Gly Glu Lys Gln Pro Trp Ala Asp Pro Glu Glu Thr Ser  
                   500                                  505                                  510  
 Glu Glu Lys Cys Gly Phe Ile His Glu Asp Glu Leu Asp Glu Glu Thr  
                   515                                  520                                  525  
 Gly Asp Ile Thr Gln Asn Tyr Ile Asn Tyr Gly Thr Thr Lys Ser Tyr  
                   530                                  535                                  540  
 Gly Ala Thr Ser Gln Glu Asn Gly Gly Trp Pro Asn Gly Trp Glu Lys  
                   545                                  550                                  555                                  560  
 Lys Glu Glu Phe Val Gln Glu Gly Ala Gln Asp Ala Tyr Thr Tyr Lys  
                                   565                                  570                                  575  
 Asp Arg Asp Asp Tyr Ser  
                   580